

## CLAIMS

1. A mounting and adjustment device (13, 113, 313, 413) for an optical observation system comprising at least one optical observation system (2, 3, 102) and 5 a pedestal (7, 107), characterised by comprising at least one element (20; 138, 144; 238, 244; 355; 455) integrally associable with said optical observation system (2, 3) and at least one element (19; 138, 142; 238, 242; 351; 451) integrally associable with said 10 pedestal (7, 107), said at least one element (20; 138, 144; 238, 244; 355; 455) integrally associable with said optical observation system (2, 3) and said at least one element (19; 138, 142; 238, 242; 351; 451) integrally 15 associable with said pedestal (7, 107) being operatively connected in a pivoting manner by at least one pivoting fulcrum (25; 136, 141; 137, 241, 108; 356; 456) and being pivotable around a pivoting axis arranged transversally with respect to one another, said device 20 additionally comprising adjustment devices (26; 126; 358; 458) for the operation of said pivoting.

2. The mounting and adjustment device in accordance with claim 1, wherein said axes of pivoting are at right angles to one another and lie on a plane which is parallel to the plane in which lies said at 25 least one element (19; 138, 142; 238, 242; 351; 451)

integrally associable with said pedestal (7, 107).

3. The mounting and adjustment device in accordance with claim 2, comprising two adjustment devices (26; 358; 458) arranged so as to form a right angle with the pivoting fulcrum (25; 356; 456).

4. The mounting and adjustment device in accordance with any of the claims 1 to 3, wherein said adjustment devices (26; 358; 458) comprise a micrometric screw comprising a stem (27) bearing a head (28) at the 10 end closest to the user and a cap (29) at the distal end, intended to press upon a striking surface of said at least one element (19; 138, 142; 238, 242; 351; 451) integrally associable with said pedestal (7, 107) or of said at least one element (20; 138, 144; 238, 244; 355; 15 455) integrally associable with said optical observation instrument (2, 3), said stem (27), threaded over at least a part of its outer surface, being engaged by screwing with a female manoeuvring screw (30), said female manoeuvring screw (30) preferably comprising a 20 vernier reading device calibrated on the angulations of the celestial coordinates.

5. The mounting and adjustment device in accordance with any of the claims 1 to 3, wherein said adjustment devices (26; 358; 458) comprise a 25 differential screw (31) comprising a stem (27) fitted

with a cap (29) intended to press upon a striking surface of said at least one element (19; 138, 142; 238, 242; 351; 451) integrally associable with said pedestal (7, 107) or of said at least one element (20; 138, 144; 5 238, 244; 355; 455) integrally associable with said optical observation instrument (2, 3), said device additionally comprising a tubular female screw (32), threaded internally and externally, arranged coaxially outwith the stem (27), and equipped with an operating handle (33), the outer threading of the tubular female screw (32) being coupled with the internal threading of a hole passing though the wall of said at least one element (19; 138, 142; 238, 242; 351; 451) integrally associable with said pedestal (7, 107) or of said at 15 least one element (20; 138, 144; 238, 244; 355; 455) integrally associable with said optical observation instrument (2, 3) wherein said differential screw (31) is inserted; the outer threading of the tubular female screw (32) and outer threading of the stem (27) having 20 different pitches.

6. The mounting and adjustment device in accordance with claim 5, wherein said adjustment devices (26; 358; 458) comprise a vernier reader calibrated on the angulations of the celestial coordinates.

25 7. The mounting and adjustment device in

accordance with claims 5 or 6, said striking surface of said at least one element (19; 138, 142; 238, 242; 351; 451) integrally associable with said pedestal (7, 107) or with said at least one element (20; 138, 144; 238, 5 244; 355; 455) integrally associable with said optical observation instrument (2, 3) comprising a seating (19a) for the cap (29) of such a shape as to block the rotation of the stem (27).

8. The mounting and adjustment device in 10 accordance with claim 7, wherein said cap (29) and said seating (19a) have complimentary shapes, preferably a polygonal shape.

9. The mounting and adjustment device in accordance with any of the claims 1 to 8, wherein said 15 element (20) integrally associable with said optical observation instrument (3) is pivoting with respect to said element (19) integrally associable with said pedestal (7), said pivoting element (20) having, in cross-section, an L-shaped profile and being constituted 20 by a sleeve (21) for the housing of said means of optical observation (3) and by a flange (22) projecting outwards; said element (19) integrally associable with said pedestal (7) being a circular element and being arranged coaxially with respect to said pivoting element 25 (20), said sleeve (21) being housed within the through

hole of the circular element (19).

10. The mounting and adjustment device in accordance with claim 8, wherein said circular element (19) and said pivoting element (20) are assembled together through sprung means of fixing (23) which provide for keeping the system assembled and under tension, between said circular element (19) and said pivoting element (20) is operatively placed a pivoting fulcrum (25).

10 11. The mounting and adjustment device in accordance with claim 10, wherein said pivoting fulcrum (25) is a sphere.

12. The mounting and adjustment device in accordance with any of the claims 1 to 8, comprising a first L-shaped element (138, 238) having a horizontal plate-shaped arm (138a, 238a) and a vertical plate-shaped arm (138b, 238b), each arm (138a, 138b; 238a, 238b) having a longer side and a shorter side; a second L-shaped element (142, 242) opposite the first L-shaped element (138, 238), having two arms (142a, 142b; 242a, 242b) of length essentially corresponding to the longer sides of the first L-shaped element (138, 238), with which they are intended to meet up with; and a third L-shaped element (144, 244) opposite the first L-shaped element (138, 238), having two arms (144a, 144b; 244a,

244b) of length essentially corresponding to that of the shorter sides of the first L-shaped element (138, 238) and intended to oppose and to match up with said shorter sides of the first L-shaped element (138, 238); said 5 device additionally comprising a first cylindrical pivoting fulcrum (136; 241) located within the complimentary seats (139, 143; 239, 243) formed in the vertical arms (138b, 142b; 238b, 242b) of said first and second L-shaped elements (138, 142; 238, 242), and a 10 second cylindrical pivoting fulcrum (141; 108) placed at right angles with respect to the first complimentary seatings (140, 145; 240, 245) formed in the horizontal arms (138a, 144a; 238a, 244a) of said first and third L-shaped elements (138, 144; 238, 244); said device 15 additionally comprising first adjustment devices (126a) operatively associated with the horizontal arms (138a, 142a; 238a, 242a) of said first and second L-shaped elements (138, 142; 238, 242) and second adjustment devices (126b) operatively associated with the vertical 20 arms (138b, 144b; 238b, 244b) of said first and third L-shaped elements (138, 144; 238, 244).

13. The mounting and adjustment device in accordance with claim 12, said device comprising a stem (136) for connection to the pedestal (107) of the 25 optical observation system and a counter balance bar

(108) for the connection of said mounting and adjustment device to said optical observation instrument (102) and to a counterweight (100), said optical observation instrument (102) and said counterweight (100) being positioned at the two ends of said counter balance bar (108).

14. The mounting and adjustment device in accordance with claim 13, wherein said stem (136) is connected to the pedestal (107) of said optical observation system through a ball joint (134) in order to connect said mounting and adjustment device to the pedestal (107) in an articulating manner, means of locking in position (135) being provided in order to maintain the ball joint in a defined position.

15 15. The mounting and adjustment device in accordance with claim 14, comprising friction clutches (246) positioned between said stem (136) and said ball joint (134) and/or between said counter balance bar (108) and said optical observation instrument (102).

20 16. The mounting and adjustment device in accordance with any of the claims 1 to 8, wherein said optical observation instruments are means for taking photographs such as a camera for celestial photography, said device comprising a fixing base (351) to said optical observation instrument (2, 3, 102) having a

mounting piece (354), to said mounting piece (354) being operatively associated, in a pivoting manner, a yoke element (355), said yoke element (355) comprising two flat pieces arranged at right angles to one another, a 5 first piece facing onto the mounting piece (354) of the fixing base (351), a second piece projecting perpendicularly from the latter; said second piece comprising means of fixing to the means for taking photographs.

10 17. The mounting and adjustment device in accordance with claim 16, said device comprising two adjustment devices (358) arranged so as to form a right angle with the pivoting fulcrum (356).

15 18. The mounting and adjustment device in accordance with any of the claims 1 to 8, comprising a yoke base (451) having a fixing piece (452) to a telescope and a mounting piece (454) operatively associated, in a pivoting manner, with a bored plate (455), the through hole of said bored plate (455) having 20 such shape and dimensions as to house an optical observation instrument such as a finder scope.

25 19. The mounting and adjustment device in accordance with claim 18, the pivoting fulcrum (456) being constituted by a sphere, said device additionally comprising two adjustment devices (458) arranged so as

to form a right angle with the pivoting fulcrum (456).

20. The mounting and adjustment device in accordance with any of the claims 1 to 19, said pivoting fulcrum (25; 136, 141; 137, 241, 108; 356; 456) 5 comprising means of restraining (459) in order to maintain the fulcrum (25; 136, 141; 137, 241, 108; 356; 456) in place within its seating.

21. The device in accordance with claim 20, wherein said means of restraining (459) comprise a stem 10 (460) which crosses through the walls of said at least one element (20; 138, 144; 238, 244; 355; 455) integrally associable with said optical observation instrument (2, 3, 102) and of said at least one element (19; 138, 142; 238, 242; 351; 451) integrally associable 15 with said pedestal (7, 107), and the pivoting fulcrum (456) itself, said stem (460) terminating at its two ends with heads (461, 461') of greater diameter than the stem (460); said stem (460) having such a length as to protrude externally over both sides of the device; said 20 means of restraining (459) additionally comprising appropriate resilient means (462, 462') arranged between the heads (461, 461') and the surface of the mounting and adjustment device.

22. The mounting and adjustment device in 25 accordance with any of the claims 1 to 21, comprising

resilient means (23, 147, 357, 457), such as traction springs, for holding together said at least one element (20; 138, 144; 238, 244; 355; 455) integrally associable with said optical observation instrument (2, 3, 102) and 5 said at least one element (19; 138, 142; 238, 242; 351; 451) integrally associable with said pedestal (7, 107).

23. An optical observation system comprising at least one mounting and adjustment device of at least one optical observation instrument (2, 3, 102) as described 10 in claims 1 to 22.

24. An optical observation system comprising a first optical observation instrument (2), a second optical observation instrument (3), a mounting and adjustment device (13) for said optical observation 15 instruments (2, 3) and a pedestal (7) to which said mounting and adjustment device (13) is connected, characterised in that said mounting and adjustment device (13) comprises a counter balance bar (8) and that said first and second optical observation instruments 20 (2, 3) are arranged at or in close proximity to the opposite ends of said counter balance bar (8) in such a way as to achieve the balancing of the optical observation system.

25. The optical observation system in accordance 25 with claim 24, wherein said first optical observation

instrument (2) is the main telescope and said second optical observation instrument (3) is a photoguide telescope.

26. The optical observation system in accordance  
5 with claims 24 or 25, wherein said mounting and  
adjustment device (13) is a device as described in any  
of the claims 1 to 22.